



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,698	10/31/2001	Frank J. Kronzer	11301-0232 (44039-264310)	2529
22827	7590	08/11/2005	EXAMINER	
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			DICUS, TAMRA	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/003,698	Applicant(s) KRONZER, FRANK J.	
	Examiner Tamra L. Dicus	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-29,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The cancellation of claims 3 and 30 are acknowledged.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-2, 4, 1-15, 22-29, 31-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,916,751 to Kronzer in view of USPN 5,468,532 to Ho et al.

Kronzer claims a heat transfer material comprising a base substrate; a first layer overlying the base substrate; a second layer overlying the first layer where both first and second layers are melt-flowable at a transfer temperature; and a release layer therebetween. See patented claims 1-20. Kronzer does not claim the first layer having pigment and a crosslinker.

Ho teaches crosslinking agents epoxy and polyfunctional aziridine are incorporated with acrylic polymers in thermal transfer media in ink compositions containing white pigment in a continuous or discontinuous layer (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, and col. 5, lines 1-5) serving to adjust melt flow characteristics (Examples and Abstract).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer to have included crosslinking agents epoxy and polyfunctional aziridine incorporated with acrylic polymers in thermal transfer media in ink compositions containing white pigment in a continuous or discontinuous layer because the composition serves to adjust melt flow characteristics (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, and col. 5, lines 1-5, Examples and Abstract of Ho).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4, 11-15, 22-28, 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,879,790 to Sogabe et al.

Kronzer teaches a heat transfer material and method comprising: a substrate layer of paper webs or plastic films (instant claims 15 and 27) (Kronzer, 12, FIG 1 and associated text); a release coating layer of acrylic polymer ethylene-methacrylic acid copolymer (Kronzer, 20, FIG 1 and associated text; col. 5, lines 44-45) (instant claims 13 and 25; a peelable film layer overlying said release coating layer, wherein said peelable film layer is melt-flowable at a transfer temperature (Kronzer, Abstract and 18, FIG 1 and associated text, functional equivalency to conformable layer as in Applicant's specification, page 8, [0025] where the peelable layer is to conform to a substrate made of a melt index less than 800 as determined by ASTM D1238-82; see col. 3, lines 33-40 and col. 5, lines 15-26 of Kronzer teaching conformable layer is of the same ethylene and wax (instant claims 11-12 and 23-24) having a melt index greater than 30 to assist in the transfer of vinyl ink because of its inherent nature it will when heated soften and flow) ; and a discontinuous polymer layer including an opacifying material, said discontinuous polymer layer overlying said peelable film layer (Kronzer, 22, FIG 1 and associated text, printed vinyl resin white ink (instant claim 2), see col. 3, line 39, col. 4, lines 15-21 and lines 50-55, col. 5, lines 15-65, and col. 6, line 25).

Kronzer explains any conventional ink may be used in continuous or discontinuous layers and teaches inks are generally composed of vinyl resin and pigments, but does not teach a crosslinking agent or that it is of epoxy (instant claims 1, 4, 22, 24, 28).

Sogabe teaches a color ink layer containing a coloring agent, binders of vinyl resins and epoxy resins (crosslinking agent) at col. 5, line 40-68 – col. 6, line 7 and Table 1) used in combination in order to adjust the melt index in heat or thermal transfer sheets.

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer to have included a crosslinking agent in the ink because Sogabe teaches crosslinking agents help adjust the melt index in heat transfers (col. 5, line 40-68 – col. 6, line 7 of Sogabe).

Kronzer does not teach a release-modifying agent (instant claims 14 and 26).

Sogabe teaches release-modifying agents such as wax and heat-meltable resins such as acrylic resins are used in combination within release layers for the purpose of assisting in transfer and adjusting melt flow (col. 5, lines 3-68-col. 6, lines 10).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer to have included release-modifying agents because Sogabe teaches release-modifying agents help adjust melt flow and assist in overall transferability in heat transfers (col. 5, line 40-68 – col. 6, line 7 of Sogabe).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,879,790 to Sogabe et al., and further in view of USPN 6,114,021 to Pankratz et al.

The combination of Kronzer is applied above.

Kronzer does not teach polyfunctional aziridine as a crosslinking agent as per instant claim 29.

Pankratz, an analogous art, teaches a coated transfer film having polyfunctionalaziridine and epoxy resin are equivalents used as crosslinking agents used in transfer media at col. 1, lines 11-15 and col. 2, lines 15-20.

Thus it would have been obvious to one having ordinary skill in the art to have modified the transfer sheet of Kronzer and Sogabe to include polyfunctionalaziridine because Pankratz teaches polyfunctionalaziridine is a functional equivalent of epoxy resins used in transfer media (col. 1, lines 11-15 and col. 2, lines 15-20 of Pankratz).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,879,790 to Sogabe et al., and further in view of USPN 5,468,532 to Ho et al.

The combination of Kronzer is applied above.

Kronzer does not teach polyfunctional aziridine as a crosslinking agent as per instant claim 29.

Ho teaches crosslinking agents epoxy and polyfunctional aziridine are incorporated with acrylic polymers in thermal transfer media in ink compositions containing white pigment in a continuous or discontinuous layer (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, and col. 5, lines 1-5) serving to adjust melt flow characteristics (Examples and Abstract).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer and Sogabe to have included crosslinking agents epoxy and polyfunctional aziridine incorporated with acrylic polymers in thermal transfer media in ink compositions containing white pigment in a continuous or discontinuous layer because the composition serves to adjust melt flow characteristics (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, and col. 5, lines 1-5, Examples and Abstract of Ho).

Claims 5-10, 16-17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,468,532 to Ho et al.

Kronzer teaches a heat transfer material and method comprising: a substrate layer of paper webs or plastic films (instant claim 19) (Kronzer, 12, FIG 1 and associated text); a release coating layer of acrylic polymer ethylene-methacrylic acid copolymer (Kronzer, 20, FIG 1 and associated text; col. 5, lines 44-45) (instant claim 17); a peelable film layer overlying said release coating layer, wherein said peelable film layer is melt-flowable at a transfer temperature (Kronzer, Abstract and 18, FIG 1 and associated text, functional equivalency to conformable layer as in Applicant's specification, page 8, [0025] where the peelable layer is to conform to a substrate made of a melt index less than 800 as determined by ASTM D1238-82; see col. 3, lines 33-40 and col. 5, lines 15-26 of Kronzer teaching conformable layer is of ethylene vinyl acetate copolymer and wax having a melt index greater than 30 to assist in the transfer of vinyl ink because of its inherent nature it will when heated soften and flow) ; and a discontinuous polymer layer including an opacifying material, said discontinuous polymer layer overlying said peelable film layer (Kronzer, 22, FIG 1 and associated text, printed vinyl resin white ink (instant claim 8), see col. 3, line 39, col. 4, lines 15-21 and lines 50-55, col. 5, lines 15-65, and col. 6, line 25).

Kronzer explains any conventional ink may be used in continuous or discontinuous layers and teaches inks are generally composed of vinyl resin and pigments, but does not teach a crosslinking agent /crosslinked polymer or that it is of epoxy or multifunctional aziridine in adjacent opaque crosslinked layers (instant claims 6-7, 9-10, and 20-21).

Ho teaches crosslinking agents epoxy and polyfunctional aziridine are incorporated with acrylic polymers (crosslinking agent + resin binder, forming crosslinked polymer) in thermal or

Art Unit: 1774

hot transfer media in ink compositions containing white pigment in continuous or discontinuous adjacent layers (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, col. 5, lines 1-10 and col. 7, line 51) serving to adjust melt flow characteristics (Examples and Abstract).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer to have included crosslinking agents epoxy and polyfunctional aziridine incorporated with acrylic polymers (crosslinking agent + resin binder, forming crosslinked polymer) in thermal transfer media in ink compositions containing white pigment in one or two continuous or discontinuous layers because the composition serves to adjust melt flow characteristics (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, col. 5, lines 1-10 and col. 7, line 51, Examples and Abstract of Ho).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,468,532 to Ho et al. and further in view of USPN 5,879,790 to Sogabe et al.

Kronzer and Ho are applied above to claim 16.

Kronzer nor Ho teach a release-modifying agent (instant claims 41, 46, and 55).

Sogabe teaches a color ink layer containing the same coloring agent, binders of vinyl resins and epoxy resins used in combination with a release layer in order to adjust the melt index in heat or thermal transfer sheets. Sogabe teaches release-modifying agents such as wax and heat-meltable resins such as acrylic resins are used in combination within release layers for the purpose of assisting in transfer and adjusting melt flow (col. 5, lines 3-68-col. 6, lines 10, col. 5, line 40-68 – col. 6, line 7 and Table 1).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer and Ho to have included release-modifying agents because Sogabe teaches release-modifying agents help adjust melt flow and assist in overall transferability in heat transfers (col. 5, line 40-68 – col. 6, line 7 of Sogabe).

Claims 1-2, 4, 11-15, 22-28, and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,362,548 to Hiyoshi et al.

Kronzer teaches a heat transfer material and method comprising: a substrate layer of paper webs or plastic films (instant claims 15 and 27) (Kronzer, 12, FIG 1 and associated text); a release coating layer of acrylic polymer ethylene-methacrylic acid copolymer (Kronzer, 20, FIG 1 and associated text; col. 5, lines 44-45) (instant claims 13 and 25; a peelable film layer overlying said release coating layer, wherein said peelable film layer is melt-flowable at a transfer temperature (Kronzer, Abstract and 18, FIG 1 and associated text, functional equivalency to conformable layer as in Applicant's specification, page 8, [0025] where the peelable layer is to conform to a substrate made of a melt index less than 800 as determined by ASTM D1238-82; see col. 3, lines 33-40 and col. 5, lines 15-26 of Kronzer teaching conformable layer is of the same ethylene and wax (instant claims 11-12 and 23-24) having a melt index greater than 30 to assist in the transfer of vinyl ink because of its inherent nature it will when heated soften and flow) ; and a discontinuous polymer layer including an opacifying material, said discontinuous polymer layer overlying said peelable film layer (Kronzer, 22, FIG 1 and associated text, printed vinyl resin white ink (instant claim 2), see col. 3, line 39, col. 4, lines 15-21 and lines 50-55, col. 5, lines 15-65, and col. 6, line 25).

Kronzer explains any conventional ink may be used in continuous or discontinuous layers and teaches inks are generally composed of vinyl resin and pigments, but does not teach a crosslinking agent or that it is of epoxy (instant claims 1, 4, 22, 24, 28).

Hiyoshi teaches a color ink layer containing a coloring agent, binders of vinyl resins and epoxy resins (crosslinking agent) at col. 7, lines 25-65– col. 8, line 25) used in combination in order to impart adhesion strength in heat or thermal transfer sheets.

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer to have included a crosslinking agent in the ink because Hiyoshi teaches crosslinking agents help impart adhesion strength in heat or thermal transfer sheets (col. 7, lines 25-65– col. 8, line 25 of Hiyoshi).

Kronzer does not teach a release-modifying agent (instant claims 14 and 26).

Hiyoshi teaches release-modifying agents such as wax and heat-meltable resins such as acrylic resins are used in combination within multifunctional release and ink layers for the purpose of assisting in transfer and adjusting melt flow (col. 6, lines 58-68–col. 7, lines 31, col. 8, lines 18-25 and line 49).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer to have included release-modifying agents because Hiyoshi teaches release-modifying agents help adjust melt flow and assist in overall transferability in heat transfers (col. 6, lines 58-68–col. 7, lines 31, col. 8, lines 18-25 and line 49 of Hiyoshi).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,362,548 to Hiyoshi et al. and further in view of USPN 6,114,021 to Pankratz et al.

The combination of Kronzer is applied above.

Kronzer does not teach polyfunctional aziridine as a crosslinking agent as per instant claim 29.

Pankratz, an analogous art, teaches a coated transfer film having polyfunctionalaziridine and epoxy resin are equivalents used as crosslinking agents used in transfer media at col. 1, lines 11-15 and col. 2, lines 15-20.

Thus it would have been obvious to one having ordinary skill in the art to have modified the transfer sheet of Kronzer and Hiyoshi to include polyfunctionalaziridine because Pankratz teaches polyfunctionalaziridine is a functional equivalent of epoxy resins used in transfer media (col. 1, lines 11-15 and col. 2, lines 15-20 of Pankratz).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,863,781 to Kronzer in view of USPN 5,362,548 to Hiyoshi et al., and further in view of USPN 5,468,532 to Ho et al.

The combination of Kronzer is applied above.

Kronzer does not teach polyfunctional aziridine as a crosslinking agent as per instant claim 29.

Ho teaches crosslinking agents epoxy and polyfunctional aziridine are incorporated with acrylic polymers in thermal transfer media in ink compositions containing white pigment in a

Art Unit: 1774

continuous or discontinuous layer (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, and col. 5, lines 1-5) serving to adjust melt flow characteristics (Examples and Abstract).

It would have been obvious to one of ordinary skill in the art to have modified the heat transfer of Kronzer and Hiyoshi to have included crosslinking agents epoxy and polyfunctional aziridine incorporated with acrylic polymers in thermal transfer media in ink compositions containing white pigment in a continuous or discontinuous layer because the composition serves to adjust melt flow characteristics (col. 3, lines 28-45, col. 4, lines 1-21 and 55-68, and col. 5, lines 1-5, Examples and Abstract of Ho).

Response to Arguments

Applicant's arguments and current amendments have been considered but are moot in view of the new ground(s) of rejection. Applicant has amended the claims to recite a peelable film layer being melt-flowable at a transfer temperature and argued the use of Yoshimura. Thus, new art has been submitted to address the new limitations. The allowable subject matter indicated in the prior Office Action of 01-12-05 has been withdrawn due to the new art presented above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 1774

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tamra L. Dicus
Examiner
Art Unit 1774

August 1, 2005



RENA DYE
SUPERVISORY PATENT EXAMINER

A.U. 1774 8/5/05